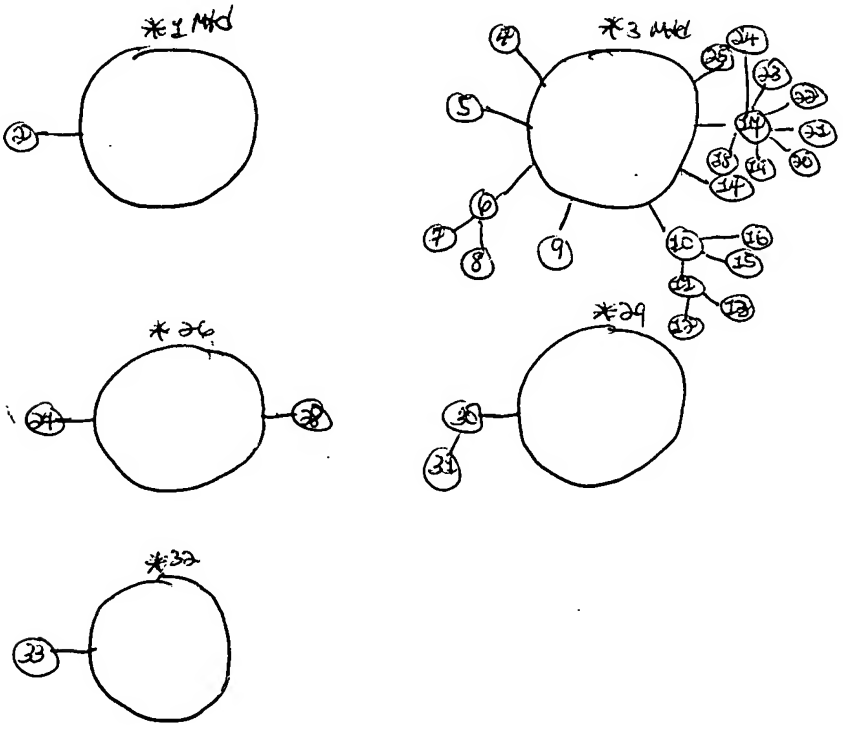
Ivan J. Mlachak
Tel# (608) 262-5355
Fax# (608) 734-38[illegible]

10/728,543 Examiner's Notes

S (single or mono) (10a) (crystal?)
S (superalloy#)
S (high?(6a) power or high?) (8a) (energ?)
S (preheat?) (8a) (melt#)
S (solid#)
S (filler#)

112¶2 Rej:
Claim 1, lines 6-7, "... RENÉ N5 and N6..." (Trademark Cite)
Claim 6, lines 16-17, "... HASTELLOY X, INCO 713..." (Trademark Cite)
Claim 32, lines 15, 16, 22-23 "... SC 180, RENÉ N5 ... MAR-M247..." (TRADEMARK CITE)

Allowable Subject Matter:
Claims 32 and 33 are allowed



103 Rej:
Claims 1-31

Search History

STN

(HCAPLUS, JAPIO, USPATALL, INPADOC, INSPEC)

3/13/2006

=> d 18 1-4 abs,bib

L8 ANSWER 1 OF 4 USPATFULL on STN

AB Methods for repair of **single crystal** **superalloys** by laser welding and products thereof have been disclosed. The laser welding process may be hand held or automated. Laser types include: CO.sub.2, Nd:YAG, diode and fiber lasers. Parameters for operating the laser process are disclosed. Filler materials, which may be either wire or powder **superalloys** are used to weld at least one portion of a **single crystal** **superalloy** substrate.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AN 2005:141214 USPATFULL

TI Methods for repair of **single crystal** **superalloys** by laser welding and products thereof

IN Hu, Yiping, Greer, SC, UNITED STATES
Hehmann, William F., Greer, SC, UNITED STATES
Madhava, Murali, Gilbert, AZ, UNITED STATES

PI US 2005120941 A1 20050609

AI US 2003-728543 A1 20031204 (10)

DT Utility

FS APPLICATION

LREP Honeywell International Inc., 101 Columbia Rd., P. O. Box 2245, Morristown, NJ, 07962-9806, US

CLMN Number of Claims: 33

ECL Exemplary Claim: 1

DRWN 3 Drawing Page(s)

LN.CNT 578

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 2 OF 4 USPATFULL on STN

AB A thermally diluted exothermic reactor system is comprised of numerous orifices distributed within a combustor by distributed perforated contactor tubes or ducts. The perforated contactors deliver and mix diluent fluid and one or more reactant fluids with an oxidant fluid. Numerous micro-jets about the perforated tubes deliver, mix and control the composition of reactant fluid, oxidant fluid and diluent fluid. The reactor controls one or more of composition profiles, composition ratio profiles and temperature profiles in one or more of the axial direction and one or two transverse directions, reduces temperature gradients and improves power, efficiency and emissions.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AN 2004:279779 USPATFULL

TI Trifluid reactor

IN Hagen, David L., Goshen, IN, UNITED STATES
Ginter, Gary, Chicago, IL, UNITED STATES
Goheen, Bill, Goshen, IN, UNITED STATES
McGuire, Allan, Elkhart, IN, UNITED STATES
Rankin, Janet, Shawano, WI, UNITED STATES

PI US 2004219079 A1 20041104

AI US 2004-763047 A1 20040122 (10)

PRAI US 2003-442096P 20030122 (60)
US 2003-442844P 20030124 (60)

DT Utility

FS APPLICATION

LREP KNOBBE MARTENS OLSON & BEAR LLP, 2040 MAIN STREET, FOURTEENTH FLOOR, IRVINE, CA, 92614

CLMN Number of Claims: 84

ECL Exemplary Claim: 1

DRWN 31 Drawing Page(s)

LN.CNT 11328

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 3 OF 4 USPATFULL on STN

AB In a method of making a load-bearing article by spray casting a molten metal onto a metal substrate, the substrate surface receiving the spray

cast deposit is treated by vacuum cleaning, boronizing and/or knurling to enhance the structural integrity of the diffusion bond joint subsequently formed between the spray cast deposit and the substrate in sustaining a load across the joint without premature joint failure.

AN 94:48406 USPATFULL
TI Method of enhancing bond joint structural integrity of spray cast article
IN Stinson, Jonathan S., Plymouth, MN, United States
Bowen, Kim E., Whitehall, MI, United States
PA Howmet Corporation, Greenwich, CT, United States (U.S. corporation)
PI US 5318217 19940607
AI US 1991-794320 19911114 (7)
RLI Continuation of Ser. No. US 1989-452958, filed on 19 Dec 1989, now abandoned
DT Utility
FS Granted
EXNAM Primary Examiner: Nelson, Peter A.
LREP Flynn, Thiel, Boutell & Tanis
CLMN Number of Claims: 37
ECL Exemplary Claim: 1
DRWN 9 Drawing Figure(s); 4 Drawing Page(s)
LN.CNT 1283

L8 ANSWER 4 OF 4 USPATFULL on STN
AB The invention consists of a method of producing a fine equiaxed grain structure (ASTM 2-4) in cast nickel-base **superalloys** which increases low cycle fatigue lives without detrimental effects on stress rupture properties to temperatures as high as 1800° F. These **superalloys** are variations of the basic nickel-chromium matrix, hardened by gamma prime [Ni.sub.3 (Al, Ti)] but with optional additions of cobalt, tungsten, molybdenum, vanadium, columbium, tantalum, boron, zirconium, carbon and hafnium. The invention grain refines these alloys to ASTM 2 to 4 increasing low cycle fatigue life by a factor of 2 to 5 (i.e. life of 700 hours would be increased to 1400 to 3500 hours for a given stress) as a result of the addition of 0.01% to 0.2% of a member of the group consisting of boron, zirconium and mixtures thereof to aid heterogeneous nucleation. The alloy is vacuum melted and heated to 250°-400° F. above the melting temperature, cooled to partial solidification, thus resulting in said heterogeneous nucleation and fine grains, then reheated and cast at about 50°-100° F. of superheat. Additions of 0.1% boron and 0.1% zirconium (optional) are the preferred nucleating agents.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AN 78:13981 USPATFULL
TI Method of improving fatigue life of cast nickel based **superalloys** and composition
IN Denzine, Allen F., Chardon, OH, United States
Kolakowski, Thomas A., Cleveland, OH, United States
Wallace, John F., Shaker Heights, OH, United States
PA University Patents, Inc., Stamford, CT, United States (U.S. corporation)
PI US 4078951 19780314
AI US 1976-672350 19760331 (5)
DT Utility
FS Granted
EXNAM Primary Examiner: Dean, R.
LREP Fay & Sharpe
CLMN Number of Claims: 16
ECL Exemplary Claim: 13
DRWN No Drawings
LN.CNT 1320
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

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(FILE 'HOME' ENTERED AT 09:34:38 ON 13 MAR 2006)

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     FILE 'HCAPLUS, INSPEC, JAPIO, USPATFULL, USPAT2, INPADOC' ENTERED AT
     09:35:14 ON 13 MAR 2006
L1        544003 S (SINGLE OR MONO)(10A)(CRYSTAL?)
L2         34095 S (SUPERALLOY#)
L3        663364 S (HIGH?(4A)POWER# OR HIGH?)(8A)(ENERG?)
L4          7038 S (PREHEAT?)(8A)(MELT# OR LIQUID#)
L5       3406730 S (SOLID#)
L6        494583 S (FILLER#)
L7             1 S L1 AND L2 AND L3 AND L4 AND L5 AND L6
L8             4 S L1 AND L2 AND L3 AND L4

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=> d his
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Search History

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     (FILE 'HOME' ENTERED AT 09:34:38 ON 13 MAR 2006)

     FILE 'HCAPLUS, INSPEC, JAPIO, USPATFULL, USPAT2, INPADOC' ENTERED AT
     09:35:14 ON 13 MAR 2006
L1       544003 S (SINGLE OR MONO)(10A)(CRYSTAL?)
L2        34095 S (SUPERALLOY#)
L3       663364 S (HIGH?(4A)POWER# OR HIGH?)(8A)(ENERG?)
L4         7038 S (PREHEAT?)(8A)(MELT# OR LIQUID#)
L5      3406730 S (SOLID#)
L6       494583 S (FILLER#)

=> s l1 and l2 and l3 and l4 and l5 and l6
L7            1 L1 AND L2 AND L3 AND L4 AND L5 AND L6

=> d l7 abs,bib

L7   ANSWER 1 OF 1  USPATFULL on STN
AB     Methods for repair of single crystal
       superalloys by laser welding and products thereof have been
       disclosed. The laser welding process may be hand held or automated.
       Laser types include: CO.sub.2, Nd:YAG, diode and fiber lasers.
       Parameters for operating the laser process are disclosed. Filler
       materials, which may be either wire or powder superalloys are
       used to weld at least one portion of a single crystal
       superalloy substrate.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AN     2005:141214  USPATFULL
TI     Methods for repair of single crystal
       superalloys by laser welding and products thereof
IN     Hu, Yiping, Greer, SC, UNITED STATES
       Hehmann, William F., Greer, SC, UNITED STATES
       Madhava, Murali, Gilbert, AZ, UNITED STATES
PI     US 2005120941      A1   20050609
AI     US 2003-728543     A1   20031204 (10)
DT     Utility
FS     APPLICATION
LREP   Honeywell International Inc., 101 Columbia Rd., P. O. Box 2245,
       Morristown, NJ, 07962-9806, US
CLMN   Number of Claims: 33
ECL    Exemplary Claim: 1
DRWN   3 Drawing Page(s)
LN.CNT 578
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
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Day : Monday
Date: 3/13/2006

PALM INTRANET

Time: 09:41:29

Inventor Name Search Result

Your Search was:

Last Name = HU
First Name = YIPING

Application#	Patent#	Status	Date Filed	Title	Inventor Name
10665028	Not Issued	41	09/16/2003	Coaxial nozzle design for laser cladding/welding process	HU, YIPING
*10728543	Not Issued	30 Applicants Invention	12/04/2003	Methods for repair of single crystal superalloys by laser welding and products thereof	HU, YIPING
10746388	Not Issued	60	12/24/2003	High-strength superalloy joining method for repairing turbine blades	HU, YIPING
10792003	Not Issued	71	03/02/2004	Modified MCrAlY coatings on turbine blade tips with improved durability	HU, YIPING
10794207	6972390	150	03/04/2004	MULTI-LASER BEAM WELDING HIGH STRENGTH SUPERALLOYS	HU, YIPING
10806727	6905728	150	03/22/2004	COLD GAS-DYNAMIC SPRAY REPAIR ON GAS TURBINE ENGINE COMPONENTS	HU, YIPING
10819816	Not Issued	71	04/06/2004	Cold gas-dynamic spraying of wear resistant alloys on turbine blades	HU, YIPING
10930506	Not Issued	71	08/30/2004	Method for repairing titanium alloy components	HU, YIPING
10936925	Not Issued	61	09/08/2004	Methods for applying abrasive and environment-resistant coatings onto turbine components	HU, YIPING
11013218	Not Issued	71	12/14/2004	Method for applying environmental-resistant MCrAlY coatings on gas turbine components	HU, YIPING
11093334	Not Issued	30	03/29/2005	Environment-resistant platinum aluminide coatings, and methods of applying the same onto turbine	HU, YIPING

				components	
11093350	Not Issued	30	03/29/2005	Repair nickel-based superalloy and methods for refurbishment of gas turbine components	HU, YIPING
11093583	Not Issued	30	03/29/2005	Nickel-based superalloy and methods for repairing gas turbine components	HU, YIPING
11238383	Not Issued	30	09/28/2005	Method for repairing die cast dies	HU, YIPING
11280106	Not Issued	25	11/15/2005	Method for repairing gas turbine engine compressor components	HU, YIPING
11336305	Not Issued	20	01/18/2006	Activated diffusion brazing alloys and repair process	HU, YIPING
60376265	Not Issued	159	04/30/2002	Nickel-base superalloy powders	HU, YIPING
10049994	Not Issued	161	02/18/2002	Gene cloning	HUANG, YIPING
10794929	Not Issued	30	03/05/2004	Gene cloning	HUANG, YIPING
60149759	Not Issued	159	08/19/1999	NOVEL CELL CULTURES FOR DRUG DISCOVERY AND SCREENING	HUANG, YIPING
60149788	Not Issued	159	08/19/1999	PRIMERS AND PROBES FOR GENE DISCOVERY AND CLONING	HUANG, YIPING

Inventor Search Completed: No Records to Display.

Search Another: Inventor **Last Name** Hu **First Name** Yiping Search

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Day : Monday
Date: 3/13/2006

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Time: 09:41:56

Inventor Name Search Result

Your Search was:

Last Name = HEHMANN
First Name = WILLIAM

Application#	Patent#	Status	Date Filed	Title	Inventor Name
10632451	Not Issued	164	07/31/2003	3-D ADAPTIVE LASER POWDER FUSION WELDING	HEHMANN, WILLIAM
10071025	6593540	150	02/08/2002	HAND HELD POWDER-FED LASER FUSION WELDING TORCH	HEHMANN, WILLIAM F.
10190150	6968991	150	07/03/2002	DIFFUSION BOND MIXTURE FOR HEALING SINGLE CRYSTAL ALLOYS	HEHMANN, WILLIAM F.
10206411	6894247	150	07/26/2002	POWDER FEED SPLITTER FOR HAND-HELD LASER POWDER FUSION WELDING TORCH	HEHMANN, WILLIAM F.
10460008	6774338	150	06/12/2003	HAND HELD POWDER-FED LASER FUSION WELDING TORCH	HEHMANN, WILLIAM F.
10713759	Not Issued	95	11/13/2003	HAND-HELD LASER WELDING WAND FILLER MEDIA DELIVERY SYSTEMS AND METHODS	HEHMANN, WILLIAM F.
10721632	7012216	150	11/24/2003	HAND-HELD LASER WELDING WAND HAVING INTERNAL COOLANT AND GAS DELIVERY CONDUITS	HEHMANN, WILLIAM F.
*10728543	Not Issued	30 Applicants' Invention	12/04/2003	Methods for repair of single crystal superalloys by laser welding and products thereof	HEHMANN, WILLIAM F.
10789854	Not Issued	30	02/26/2004	Hand held powder-fed laser fusion welding torch	HEHMANN, WILLIAM F.
10792003	Not Issued	71	03/02/2004	Modified MCrAlY coatings on turbine blade tips with improved durability	HEHMANN, WILLIAM F.
10794207	6972390	150	03/04/2004	MULTI-LASER BEAM	HEHMANN,

				WELDING HIGH STRENGTH SUPERALLOYS	WILLIAM F.
10929071	Not Issued	30	08/27/2004	Repair of turbines on wing	HEHMANN, WILLIAM F.
10936925	Not Issued	61	09/08/2004	Methods for applying abrasive and environment-resistant coatings onto turbine components	HEHMANN, WILLIAM F.
11055924	Not Issued	20	02/11/2005	Mobile hand-held laser welding support system	HEHMANN, WILLIAM F.
11238383	Not Issued	30	09/28/2005	Method for repairing die cast dies	HEHMANN, WILLIAM F.
11280106	Not Issued	25	11/15/2005	Method for repairing gas turbine engine compressor components	HEHMANN, WILLIAM F.

Inventor Search Completed: No Records to Display.

Search Another: Inventor **Last Name** Hehmann **First Name** William Search

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Day : Monday
Date: 3/13/2006

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Time: 09:42:11

Inventor Name Search Result

Your Search was:

Last Name = MADHAVA
First Name = MURALI

Application#	Patent#	Status	Date Filed	Title	Inventor Name
10728543	Not Issued	30	12/04/2003	Methods for repair of single crystal superalloys by laser welding and products thereof	MADHAVA, MURALI
10806727	6905728	150	03/22/2004	COLD GAS-DYNAMIC SPRAY REPAIR ON GAS TURBINE ENGINE COMPONENTS	MADHAVA, MURALI
10819816	Not Issued	71	04/06/2004	Cold gas-dynamic spraying of wear resistant alloys on turbine blades	MADHAVA, MURALI
10836791	Not Issued	30	04/30/2004	Chromium diffusion coatings	MADHAVA, MURALI
10854985	Not Issued	30	05/26/2004	Active elements modified chromium diffusion patch coating	MADHAVA, MURALI
10928545	Not Issued	71	08/26/2004	Chromium and active elements modified platinum aluminide coatings	MADHAVA, MURALI
60376265	Not Issued	159	04/30/2002	Nickel-base superalloy powders	MADHAVA, MURALI
09996533	6645926	150	11/28/2001	FLUORIDE CLEANING MASKING SYSTEM	MADHAVA, MURALI N.
10976749	Not Issued	61	10/29/2004	Aluminum articles with wear-resistant coatings and methods for applying the coatings onto the articles	MADHAVA, MURALI N.
11013218	Not Issued	71	12/14/2004	Method for applying environmental-resistant MCrAlY coatings on gas turbine components	MADHAVA, MURALI N.
11027152	Not Issued	30	12/29/2004	Low cost inovative diffused MCrAlY coatings	MADHAVA, MURALI N.
11044873	Not	30	01/26/2005	High strength amorphous and	MADHAVA,

	Issued			microcrystaline structures and coatings	MURALI N.
11093334	Not Issued	30	03/29/2005	Environment-resistant platinum aluminide coatings, and methods of applying the same onto turbine components	MADHAVA, MURALI N.
11114470	Not Issued	20	04/25/2005	Magnesium repair and build up	MADHAVA, MURALI N.

Inventor Search Completed: No Records to Display.

Search Another: Inventor **Last Name** Madhava **First Name** Murali Search

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